

Low-Tech Grasshopper Monitoring

How can researchers accurately estimate where, when, and how many grasshoppers are invading croplands from surrounding areas? Standard sampling methods that were developed on grasslands with relatively sparse vegetation are based on visual counts. It's much trickier to conduct a census of grasshoppers in areas with a dense crop canopy such as small grains provide.

Scientists are now testing a simple device that's been used for a long time to catch other insects: a vertical pane of glass above a container of soapy water. The grasshoppers fly against the glass, fall into the water, sink to the bottom, and drown because the soap breaks the water's surface tension. Others may also be attracted to the trap by the smell of the dead ones.

While the traps are somewhat costly and labor-intensive, they may offer a way for researchers to get more reliable grasshopper counts in otherwise incalculable areas. Efforts are under way to evaluate the trap and test it under a variety of conditions. *Dennis J. Fielding, USDA-ARS Subarctic Agricultural Research Unit, Fairbanks, Alaska; phone (907) 474-2439, e-mail ffdjfl@uaf.edu.*

U.S.-Canadian Cricket Collaboration

Ecologists on both sides of the northern U.S. border are interested in migratory bands of Mormon crickets in and around Dinosaur National Monument in Colorado. In this protected habitat, the insects' natural behavior and movements won't be altered by the activity of ranchers or other researchers. When their numbers swell, this species of katydid causes widespread damage to agricultural areas. In an outbreak, well over 100,000 of the flightless crickets roam across the land, devouring crops, grasses, and ornamentals as they go.

The scientists are using high-tech radio telemetry and harmonic radar to

keep track of Mormon cricket movements. They are looking for environmental cues that determine the speed, direction, and distance a band will go. If enough data can be gathered, it may be possible to develop predictive models that would help fine-tune pesticide applications and reduce nontarget species' exposure. *Gregory A. Sword, USDA-ARS Northern Plains Agricultural Research Laboratory, Sidney, Montana; phone (406) 433-9429, e-mail gsword@sidney.ars.usda.gov.*

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Female Mormon cricket.

Mixed Diet May Help Ward Off Esophageal Cancer

Scientists last year looked at the food consumption habits of nearly 700 people, asking them to recall how frequently they ate 54 specific food items. The responses were then sorted into six distinct dietary patterns called "healthy," "high-meat," "high-salty-snack," "high-dessert," "high-milk," and "high-white-bread." The lowest rate of esophageal cancer was found among respondents within the "healthy" pattern. Included in this diet were many fruits, vegetables, and whole grains—which are also good sources of carotenoids, vitamin C, B vitamins, and dietary fiber.

Esophageal cancer is particularly virulent, with only 12 percent of patients surviving for 5 years. Respondents consuming "high-meat" diets, who also had lower fruit and vegetable intakes, had a 3.6 times higher risk of esophageal

cancer—and a nearly 3 times higher risk of stomach cancer—than did those within the "healthy" diet pattern. Rather than choosing the recommended two to three daily servings from varied groups of protein sources including poultry, fish, beans, eggs, and nuts, as well as meat, those following a "high-meat" dietary pattern consumed nearly three servings of red meat or processed meat alone.

This work was done with National Cancer Institute researchers and published in the *American Journal of Clinical Nutrition*. Now, larger studies are needed to confirm these findings. *Katherine L. Tucker, Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University, Boston, Massachusetts; phone (617) 556-3351, e-mail tucker@hnrc.tufts.edu.*

New for the Kids' Lunchboxes—SB&Js!

If you—or your child—are one of an estimated 3 million Americans allergic to peanuts or tree nuts, you may be pleased to know that a tasty, peanutlike spread is on its way to market. This sandwich ingredient's made from sunflower seeds blended with other ingredients that give it a "sunbuttery" flavor. It spreads well and tastes better than earlier attempts to make a palatable sunflower spread.

Food technologists working with Red River Commodities, Inc., Fargo, North Dakota, developed the improved process. The company will test regularly for any peanut residue in the ingredients to further ensure that the product is wholly peanut-free. Sunflower seeds are a good source of protein, fiber, vitamin E, zinc, and iron. "Sunbutter" spread looks similar to peanut butter and has a mild, yet distinctive sunflower seed flavor. *Isabel M. Lima, USDA-ARS Food Processing and Sensory Quality Research Laboratory, New Orleans, Louisiana; phone (504) 286-4515, e-mail imlima@srrc.ars.usda.gov.*